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Three New Histerid Beetles from the Pacific Northwest, with Records and Synonymies of Additional Species

(Coleoptera: Histeridae)

RUPERT L. WENZEL

CURATOR, DIVISION OF INSECTS

The following notes and descriptions are published at this time in order to provide Professor Melville Hatch with certain names and synonymies needed for his treatment of the family Histeridae in Volume 3 of *Beetles of the Pacific Northwest.*

I am indebted to the following individuals for the privilege of studying specimens in their care: Prof. George E. Ball, University of Alberta, Edmonton; Dr. William J. Brown, Entomology Research Institute, Canada Department of Agriculture, Ottawa; Dr. J. F. Gates Clarke and Dr. O. L. Cartwright, United States National Museum; Prof. Melville H. Hatch, University of Washington; Dr. Edward S. Ross, California Academy of Sciences; and Prof. Harry C. Severin, South Dakota State College, Brookings, South Dakota. I am indebted to Mr. Hugh B. Leech, California Academy of Sciences, for supplying information on certain localities in British Columbia and California.

I am indebted to Miss Marion Pahl, Staff Illustrator, for the execution of figure 79, D, E, as well as for other assistance in the preparation of the illustrations. All photographs were made by me.

Where locality data include the county in parentheses, the county name was not on the original specimen label but has been supplied by me.

P–P=length between anterior angles of pronotum and apex of pygidium; P–E=length between anterior angles of pronotum and apices of elytra.

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The abbreviations used for collections are as follows:

AF	A. Fenyes Collection
CAS	California Academy of Sciences
CNHM	Chicago Natural History Museum
ESR	Edward S. Ross Collection
FEB	Frank E. Blaisdell Collection
FWN	F. W. Nunenmacher Collection
LSS	L. S. Slevin Collection
MHH	Melville H. Hatch Collection
SDSC	South Dakota State College
UA	University of Alberta
USNM	United States National Museum
UW	University of Washington
VD	E. C. Van Dyke Collection

A compound abbreviation, such as FWN–CNHM, indicates that the specimen is from the F. W. Nunenmacher Collection in Chicago Natural History Museum.

Subfamily **SAPRININAE**

Saprinus impressus LeConte

Saprinus impressus LeConte (J. E.), 1845, Boston Jour. Nat. Hist., **5**: 74, pl. 5, fig. 10—Georgia (?Museum of Comparative Zoology).

Saprinus piceus LeConte (J. E.), loc. cit., p. 73, pl. 5, fig. 8—without locality (Museum of Comparative Zoology).

Saprinus infaustus LeConte (J. E.), 1852, Proc. Acad. Nat. Sci., Philadelphia, **6**: 40 (*nomen novum* for *piceus* LeConte, not Paykull, 1811).

In the LeConte collection is a specimen with a color label for "Southern States" that clearly is LeConte's *Saprinus impressus* and probably is the type of that species.[1]

Another specimen in the LeConte collection carries a determination label, "*Saprinus infaustus* LeConte"; a second label, "*piceus* LeConte nec Payk."; and a color label for "Middle States." This specimen is somewhat smaller and more coarsely punctate on the elytra than is usual for *impressus*, but I believe it to be that species. It is probably the type of J. E. LeConte's *Saprinus piceus*. LeConte described *piceus* without giving a precise locality, merely "Habitat ad oras maris."

I tentatively refer the following specimens from the Pacific Northwest to *S. impressus:*

[1] Most of the types of the North American Histeridae described by John Eaton LeConte seem to be present but unmarked in the collection of his son, John L. LeConte. However, in 1951 I found his type of *Onthophilus nodatus*, as well as the types of most of his exotic Histeridae (LeConte, 1860) in the Marseul collection in the Museum National d'Histoire Naturelle, Paris.

BRITISH COLUMBIA: Trail, 1 ♂, June 31, 1931, H. Fowler (CNHM).

WASHINGTON: Republic, 4 ♂, 2 ♀, August 6, 1931, Sanderson (CNHM).

At hand are many other specimens (CNHM) from localities throughout California and from southwestern and southeastern United States. Males from western United States differ slightly from males from Florida in the structure and chaetotaxy of the eighth sternum, and they may represent a distinct species. Because I have not yet seen and studied the terminalia of males from intermediate localities, I am unwilling at this time to regard the western population as a separate species.

Saprinus cribrum Casey (=*Saprinus carri* Hatch), new synonymy. Figures 76, B; 77, A, D, F; 78.

Saprinus cribrum Casey, 1893, Ann. N. Y. Acad. Sci., 7: 568—Cheyenne, Wyoming (No. 38532, United States National Museum).

Saprinus carri Hatch, 1926, Can. Ent., 58: 272—Medicine Hat, Alberta (Canadian National Collection, Ottawa).

Hatch separated his *Saprinus carri* from *S. cribrum* Casey because of a difference in the extent of the sutural stria. In the type of *carri* this stria is complete basally and united with the fourth dorsal; in the type of *cribrum* it is obsolete basally.

I have examined a series of 32 topotypes of *carri*, collected by F. S. and J. Carr, and have compared several of them with the types of both *cribrum* and *carri*. Aside from the character of the sutural stria, they agree well with both types. In 9 topotypes of *carri*, the sutural stria is obsolete basally, as in the type of *cribrum*. In the other topotypes this stria is complete, as in *carri*. In a series of about 34 other specimens that I have seen, 7 have the sutural stria obsolete basally. Similar variation occurs in the closely related *Saprinus malkini*, new species. In one male of *cribrum* from Helena, Montana, the fourth dorsal stria is absent except for a basal arc that is united with the sutural stria.

To my knowledge the type localities of *S. cribrum* and its synonym *S. carri* are the only records previously published for this species. I have examined specimens from the following localities:

BRITISH COLUMBIA: Edgewater, July 11, 1919, F. S. Carr (AU); Kamloops, June 1, 1933 (CAS); Osoyoos, April 24, 1925, Miss Webb (CAS); Trinity Valley, June 5, 1929, J. R. Howell (CAS).

ALBERTA: Calgary, May 25, 1924, O. Bryant (UA); Cypress Hills, June 4, 1932, F. S. Carr; Lethbridge, March, 1928, F. S. Carr (UA); Medicine Hat, April 23, 1923 (CNC), type of *carri*, and 32 specimens April 16–June 16, 1923–34,

F. S. and J. Carr (CAS, CNHM, UA, USNM); Tilley, July 12, 1932 (UA), July 15, 1934 (CAS), J. Carr.

WASHINGTON: Dry Falls, Grand Coulee (Grant Co.), May 13, 1950, M. H. Hatch (MHH–UW); Vantage, May 9, 1953, Melville H. Hatch (MHH–UW).

OREGON: Juniper Lake, May 25, 1930 (MHH–UW).

IDAHO: Berger (Twin Falls Co.), April 18, 1935, May 23, 1935 (USNM); Lava Hot Springs (Brannock Co.), Lucile Maughan (CAS).

MONTANA: "Assinb'ne," May 10, Hubbard and Schwarz (USNM); Bozeman (Gallatin Co.), June 11 (CNHM); Gallatin Co., May 4 (CNHM); Havre (Hill Co.), June 10–11, Wickham (USNM); Helena (Lewis and Clark Co.), April 27, Hubbard and Schwarz (USNM).

SOUTH DAKOTA: Belle Fourche, "Trap. 1, N," July 6, 1941, N. P. Larson (SDSC); Eureka, April 18, 1939, Lynn K. Brunn (SDSC).

WYOMING: Cheyenne (Laramie Co.), type of *cribrum*.

COLORADO: Florissant (Teller Co.), May 28, 1914 (CAS).

ARIZONA: Flagstaff (Coconino Co.), Fenyes (CAS).

I have found the following new species variously identified in collections as *Saprinus carri* Hatch, *S. cribrum* Casey, *S. insertus* LeConte, or *Saprinus* "n. sp."

Saprinus malkini, new species. Figures 76, A; 77, C, E; 78.

A densely punctate species, belonging to group VI (*sensu* Horn, 1873); pronotum and elytra unusually evenly punctate throughout. Closely related to *S. cribrum* Casey and differing from that species as follows: punctures of inter-strial intervals on basal half essentially round and separated, though dense (usually somewhat elongated and subconfluent in *cribrum*); metasternal disk less distinctly punctulate; inner subhumeral stria long, extending from basal third or middle to apical fourth (absent or represented by only a short dash just beyond middle in *cribrum*); lateral metasternal stria (fig. 76, A) extending to anterior margin of hind coxa (abbreviated without reaching coxa in *cribrum* as in fig. 76, B); meso-postcoxal stria (fig. 76, A) arcuate, extending obliquely posteriorly and outwardly, away from posterior margin of mesocoxal cavity, and then abbreviated or only slightly recurved anteriorly (complete, parallel to posterior margin of mesocoxal cavity and extending to metasternal-mesepimeral suture in *cribrum* as shown in fig. 76, B); aedeagus and tenth tergum differing as shown in figure 77.

This species also resembles *S. insertus* LeConte, and especially the variant *obtectus* LeConte (=*opacellus* Casey) in which the coarser elytral punctures may extend to the base in the intervals between

striae 1–4 and nearly to the base in the sutural interspace. It can be readily separated from this species, however, by the aedeagus, which is dilated at the apex (fig. 77, F) in both *malkini* and *cribrum* (not dilated in *insertus*, fig. 77, G), and by the uniform extension of

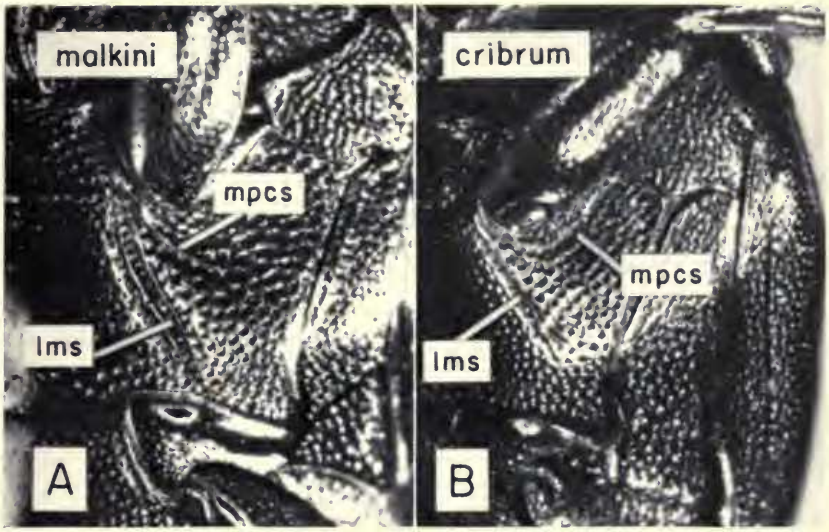

FIG. 76. Elevated metasternal sides and pleurites (× 40). A, *Saprinus malkini*, n. sp., paratype (Vantage, Washington); B, *Saprinus cribrum* Casey (Medicine Hat, Alberta). *mpcs*=meso-postcoxal stria; *lms*=lateral metasternal stria.

the coarser punctures to the base in the sutural interval (fine punctures present on the basal fourth or third in the sutural interval in *insertus*). In *S. insertus* var. *micropunctatus* McGrath and Hatch (1941, p. 60) there are only very minute scattered punctules in the sutural interval on a little less than basal half, and only a few scattered punctules in the intervals between striae 1–4 on basal third.

Description.—Form oblong-oval, moderately convex. Color black, shining. Upper surface densely, moderately and rather uniformly punctate throughout (punctures rarely separated by as much as their diameters), except as follows: (1) the pronotal punctures denser and subconfluent toward the sides and anteriorly, distinctly smaller and more elongate along the side margins, sparsest at the middle of the pronotum where they are separated by about one-half their diameters; (2) the elytral punctures in the scutellar region along the sutural stria, or in intervals 1–4, may be separated by about their diameters, while they are very fine and distinctly sparser along the flanks beyond the first dorsal stria and apically they tend to be more dense and elongate, sometimes subconfluent.

Head very finely and densely punctate, punctation on epistoma subrugose.

Marginal pronotal stria poorly impressed behind the head, appearing to be abbreviated behind the eyes on each side, though the margin itself is distinctly and finely beaded.

Marginal epipleural stria fine, sometimes indistinct at the middle. Marginal elytral stria stronger, subcariniform, complete, extending around the outer apical

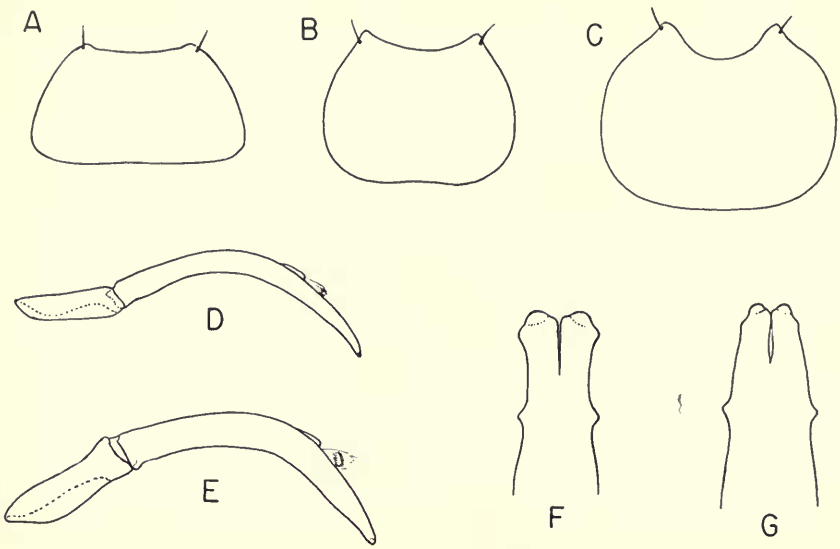

FIG. 77. A–C, Tenth abdominal tergum (× 90): A, *Saprinus cribrum* Casey (Gallatin County, Montana); B, *S. insertus* LeConte (White Mountains, Arizona); C, *S. malkini*, n. sp., paratype (Vantage, Washington). D, E, Aedeagus, lateral view (× 40): D, *S. cribrum* (Gallatin County, Montana); E, *S. malkini*, paratype (Vantage, Washington). F, G, Tip of aedeagus, dorsal view (× 90): F, *S. cribrum* (Medicine Hat, Alberta); G, *S. insertus* (St. Helena, California).

angle of the elytron and across the apex for about half the distance to the suture. External subhumeral stria short, close to and subparallel to the marginal elytral stria and confluent with it anteriorly. Inner subhumeral stria well developed, closely punctate, usually present from about the basal third to the apical sixth, sometimes beginning near the middle. Oblique humeral indicated by a feeble, oblique, narrowly and densely punctate impression, the interval between it and the first dorsal stria more coarsely and densely punctate.

Propygidium very densely and rather finely punctate, excepting a more sparsely punctate, distinctly smoother area adjacent to the anterior margin. Pygidium densely, subcribrately punctate, the punctures very gradually finer and slightly sparser at apex in the male, scarcely finer at apex than at base, cribrate apically in the female.

Prosternum narrowly saddle-shaped, densely and very finely punctate; foveae distinct, transversely oval, of moderate size for the group, not united by a stria or sulcus across apex. Carinal and lateral striae complete.

Marginal mesosternal stria complete. Meso-metasternal stria strongly crenated by coarse punctures. Meso-postcoxal stria (fig. 76, A) arcuate, extending

obliquely posteriorly for about one-third the distance between the middle and hind coxae, extending laterally or recurved for a very short distance and then abbreviated a little more than half-way between the lateral metasternal stria and the metepisternum. Lateral metasternal stria strong, subcariniform, punctate, feebly sinuous, extending posteriorly to about the middle of the anterior edge of the hind coxa. Lateral stria of first abdominal sternum subcariniform, feebly oblique, complete. Meta-postcoxal stria absent. Mesosternal disk rather coarsely, evenly punctate, the punctures mostly separated by about their diameters, becoming finer behind the meso-metasternal suture on the metasternal disk, very fine and sparse at the middle of the disk, coarsest and densest along and medial to the lateral metasternal stria and on each side of the metasternum along the apical margin, finer at the middle of the apical margin; punctures medial and anterior to the hind coxa of about the same size as the mesosternal punctures. First abdominal sternum feebly and sparsely punctate medially and basally, the punctures becoming coarser and dense laterally and apically, a submarginal row of closely placed punctures present across the apex. Elevated sides of the first sternum densely, moderately punctate, the punctures much coarser anteriorly. Protibiae 6–8 denticulate, meso- and metatibiae 6–8 spinulose, all rather typical for the group.

Length, P–E 2.51–3.30 mm., P–P 3.05–3.74 mm.; width, 2.06–2.71 mm.

Holotype.—A male from Berkeley, California, collected April 5, 1930, by Howard E. Hinton. In the collection of Chicago Natural History Museum (C. A. Ballou Collection).

Paratypes.—CALIFORNIA: Los Angeles Co., 1 ♂ (VD–CAS). Tulare Co., 1 ♀, June 12, 1939, F. W. Nunenmacher (FWN–CNHM). Potwisha, Sequoia National Park (Tulare Co.), 2,000–5,000 ft. alt., 2 ♀, May 20, 1930 (VD–CAS). Lewis Creek, San Benito Co., 1 ♂, May, 1907 (FEB–CAS). Carmel (Monterey Co.), 1 ♂, May 27, 1922, L. S. Slevin (LSS–CAS). Bass Lake (=Crane Valley Lake, Madera Co.), 1 ♂, July 1, 1928, R. S. Wagner (ESR–CAS). 10 mi. N. of Yosemite (Tuolumne Co.), 7,000 ft. alt., 1 ♀, July 21, 1940, H. P. Chandler (CAS). Pine Ridge (Santa Clara Co.), 1 ♂, May 15, 1932, R. S. Wagner (ESR–CAS). Livermore Mts. (?Alameda Co.), 1 ♂, 1 ♀, April 22, 1933, E. J. Blum (ESR–CAS). Oakland (Alameda Co.), 1 ♂, July 1, 1934; 1 sex undet., May, 1936, E. S. Ross (ESR–CAS); 2 ♂, April 26, 1908 (VD–CAS). San Francisco (San Francisco Co.), 1 ♂, April, 1946, "under stone," D. Guiliani (ESR–CAS). Marin Co., 1 ♀, June 11, 1905, F. W. Nunenmacher (ESR–CAS). Murphys, Calaveras Co., 2,500 ft. alt., 1 ♀, May 6, 1937, F. E. Blaisdell (CAS); 1 ♂, June 22, 1926, J. F. Lamiman (ESR–CAS). Licking Fork, Mokelumne River (?Calaveras Co.), 2,900–3,100 ft. alt., 2 ♂, June, Blaisdell-Letcher (FEB–CAS). Mokelumne Hill (Calaveras Co.), 1 ♀, July 18, 1910 (FEB–CAS). Eldorado Co., 3,000–4,000 ft. alt., 1 sex undet. (VD–CAS). Challenge, Yuba Co., 1 ♀, July 18, 1928, R. S. Wagner (ESR–CAS).

Yorkville, Mendocino Co., 1 ♂, April 24, 1928 (ESR–CAS). Mendocino Co., 1 ♀, July 20 (ESR–CAS). Meadows Valley, Plumas Co., 3,500–4,000 ft. alt., 1 ♀, June 6, 1924, W. H. Nelson (ESR–CAS). Plumas Jn. (?Plumas Co.), 1 ♀, June 5, 1926 (AF–CAS). Green Point, Humboldt Co., 1 ♀, June 12, 1916 (FEB–CAS).

OREGON: Talent (Jackson Co.), 1 ♂, June 6, 1939, F. W. Nunenmacher (FWN–CNHM). Dalles (Wasco Co.), 1 sex undet., May 15, 1 sex undet., without date, Hubbard and Schwarz (USNM).

WASHINGTON: Walla Walla (Walla Walla Co.), 1 ♂, April 22, 1925, "flying," M. C. Lane (MHH–UW). Palouse Falls (Franklin Co.), 1 ♀, May 14, 1922, M. C. Lane (MHH–UW). Dry Falls, Grand Coulee (Grant Co.), 1 ♂, May 6, 1951, M. H. Hatch (MHH–UW). Moses Lake (Grant Co.), 1 ♂, May 30, 1953, M. H. Hatch (MHH–UW). Vantage, 5 ♂, 5 ♀, May 9, 1953, M. H. Hatch (MHH–UW).

Paratypes to be deposited in the collections of Chicago Natural History Museum; University of Washington (Hatch Collection); the California Academy of Sciences; the United States National Museum; the Museum of Comparative Zoology; the American Museum of Natural History; the Canadian National Collection at Ottawa; the British Museum (Natural History); the Museum National d'Histoire Naturelle, Paris; Mons. Jean Thérond (Nimes, France); and the Zoologisches Museum, Humboldt-Universität zu Berlin.

Remarks.—*Saprinus malkini* and *S. cribrum* are largely allopatric. Their distributions (fig. 78) and close relationships suggest that they were derived by the splitting of a single species. If this is true, then whatever barrier or barriers originally served to segregate the ancestral species into eastern and western populations are no longer completely effective and a mingling of the two occurs, at least in the north. Both species have been collected in Washington at Dry Falls, Grand Coulee, and at Vantage by Professor Hatch. No specimens are known to me that would indicate that the two species hybridize. Unfortunately nothing is known of the ecology of either species.

Subfamily **DENDROPHILINAE**

Bacanius hatchi, new species. Figure 79, A.

Bacanius tantillus, McGrath and Hatch, 1941, Univ. Washington Pub. Biol., **10**: 57, pl. 10, fig. 3 (not LeConte, 1853).

Rather strongly convex, elongate-oval, the upper surface punctate throughout; antescutellar stria absent; outer subhumeral stria

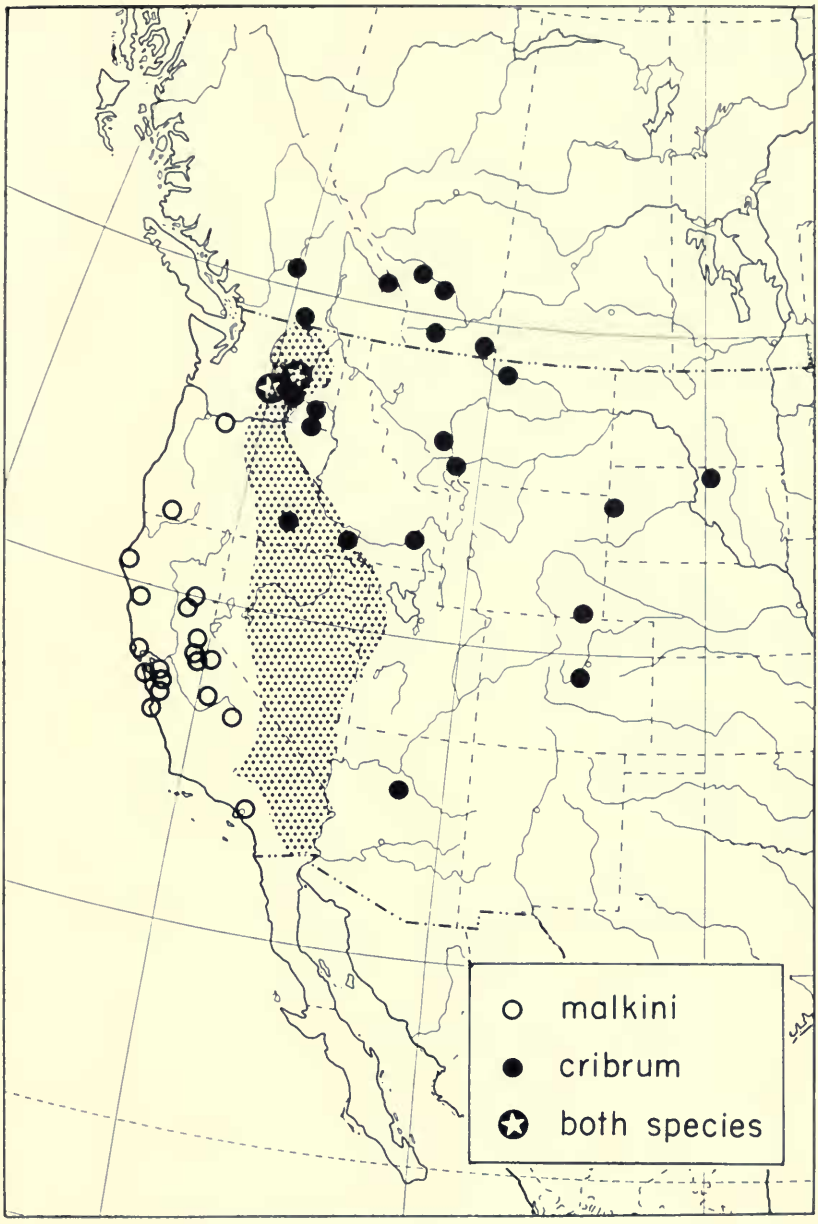

FIG. 78. Map showing distribution of *Saprinus malkini*, n. sp., and *S. cribrum* Casey.

basal, the inner subhumeral absent; first dorsal stria apical; elytral sutural stria present apically but poorly impressed, broken up; central area of metasternum minutely punctate; a fine median carina at apex of metasternum; a few apical elytral punctures coalesced to form feeble sulci.

Bacanius hatchi differs from *B. tantillus* (from eastern United States) as follows: in *hatchi* the metasternum has a fine median apical carina (lacking in *tantillus*); the metasternal disk is much more finely punctate in a broad median area; the mesosternum is more finely punctate (coarsely punctate in *tantillus*); and the outer subhumeral stria is absent apically (distinct apically in *tantillus* but confused with punctures toward the middle). *B. globulinus* Casey, like *hatchi*, has an apical metasternal carina. In *globulinus* the entire metasternal disk is coarsely punctate, though the coarse punctures are smaller at the middle, and an inner subhumeral elytral stria is present apically.

Description.—Form somewhat elongate-oval, rather strongly convex. Color dark reddish-brown, shining. Head sparsely, very finely punctate. Frontal suture visible only under certain lighting as a dark line beneath the surface of the integument.

Pronotum moderately coarsely punctate in a broad antescutellar area, on about the basal third, the punctures separated by their diameters or slightly more, the punctures becoming progressively finer and somewhat sparser apically and laterally, minute along the lateral margin. Marginal stria fine, complete, finely and sparsely punctate, but not crenulate, along the anterior margin.

Elytra rather coarsely, deeply punctate on a little more than the basal half, from the suture to the finely, sparsely punctate flanks. A few fine punctures are present along the suture and near the scutellum; the coarsest punctures of the elytra are separated by about their diameters or slightly more, and are coarser than the coarsest pronotal punctures. On the apical two-fifths the punctures become noticeably finer, sparser and shallower; some of the punctures on the apical fourth coalesce to form a few longitudinal strioles or sulci, the punctures minute at the extreme apex. In the holotype, a few longitudinal strioles are present on each side near the scutellum. The marginal epipleural stria is complete, subcariniform, rather distantly removed from the margin apically, especially at the mid-length of the fossette where it is equidistant from the epipleural margin and the upper edge of the fossette. Outer subhumeral stria present on about the basal half, its apex curved upwardly, with a row of coarse punctures along the upper edge. Inner subhumeral absent. First dorsal stria strongly impressed, subcariniform, present on slightly more than the apical half, closely punctate, continued around the outer apical elytral angle, then abbreviated. Fossette with a few indistinct oblique strioles. Sutural stria present apically, not well defined.

Pygidium rather densely punctate, the punctures of moderate size, similar to those at the middle of the pronotum, separated by about their diameters or slightly less, those at the apex minute.

Prosternal keel almost square, punctulate, the striae parallel, punctate. Prosternal lobe strongly, moderately, sparsely punctate. Mesosternum moderately,

rather sparsely punctate, the punctures becoming abruptly finer and sparser medially beyond the meso-metasternal suture, while laterally on the disk the punctures are coarse, as they are also in a transverse band across the apex. A fine median longitudinal carina present on the apical fifth of the metasternum. Elevated metasternal sides very coarsely punctate, the punctures separated by their diameters or slightly less. Lateral metasternal stria complete, subcariniform, recurving to the angle formed by the metasternal and mesepimeral-metepisternal sutures. Meso-postcoxal stria strongly hamate at tip. Meso-postcoxal plaque feebly rugulose, slightly more sparsely punctate than the elevated sides behind the plaque. Mesepimeron longitudinally divided by a strongly arcuate stria, the inner area microrugulose, the outer coarsely punctate.

Intercoxal disk of first abdominal sternum less coarsely punctate than the adjacent apex of the metasternal disk, the punctures becoming much finer at the middle, with the exception of a row of coarse punctures along the basal margin. Lateral stria strongly subcariniform, extending obliquely inward to the apical margin, bending and continuing laterally along the apical margin to the lateral margin, where it bends and then continues anteriorly nearly to the anterior margin.

Length 1.03–1.22 mm. (holotype), width 0.77–0.80 mm. (holotype).

Holotype.—A female from Seattle, Washington. In the Hatch collection of the University of Washington.

Paratypes.—A female, same data as the type. A male and two females from Baring (King Co.), Washington, July (A. Fenyes Collection). In the collections of Chicago Natural History Museum and the California Academy of Sciences.

Remarks.—As indicated above, this is the species recorded as *Bacanius tantillus* by McGrath and Hatch, and the holotype is the specimen figured by them.

Subfamily **HISTERINAE**

Margarinotus fractifrons (Casey) (= *Hister planifrons* Lewis, *H. fidelis* Casey), new synonymy.

Hister fractifrons Casey, 1893, Ann. N. Y. Acad. Sci., **7**: 543, 541 (key)—California, Lake Tahoe (No. 38415, United States National Museum); 1916, Mem. Coleop., **7**: 289.

Margarinotus fractifrons, Wenzel, 1944, Field Mus. Nat. Hist., Zool. Ser., **28**: 126.

Hister planifrons Lewis, 1908, Ann. Mag. Nat. Hist., (8), **2**: 149—Vancouver Island (British Museum [Natural History]); Casey, 1916, Mem. Coleop., **7**: 289.

Hister fidelis Casey, 1916, Mem. Coleop., **7**: 289—Oregon (No. 38413, United States National Museum); McGrath and Hatch, 1941, Univ. Washington Pub. Biol., **10**: 70, pl. 17, fig. 43.

In the type of *fractifrons*, the frontal stria of the head is narrowly interrupted. When Casey described it, he remarked that he had

seen a specimen—collected by Wickham on Vancouver Island—in which the frontal stria was more widely interrupted. Wickham also sent a Vancouver specimen—one in which the frontal stria was completely absent—to Mr. George Lewis. Lewis named it *planifrons*.

Subsequently, Casey described as *fidelis* an Oregon specimen in which the frontal stria was narrowly interrupted as in *fractifrons*, but which presumably differed from it in lacking apical elytral punctulation. The distinctness of this punctulation varies in *fractifrons*, and *fidelis* cannot be separated on this basis.

The frontal stria is very unstable in *fractifrons*. In the 32 specimens that I have examined from the Pacific Northwest, the frontal stria varies as follows: Complete, 1; narrowly interrupted on each side, 2; narrowly interrupted at middle, 8; narrowly interrupted on each side and at middle, 15; represented only by a short arc on one side, 4; absent, 2.

I have examined the aedeagi of the type and of several dozens of males of *fractifrons* from northern California and the Pacific Northwest, and I have been unable to detect any significant differences between them.

However, many specimens from California exhibit distinctive differences in tibial structures and apparently in size. It seems likely that population differences will be demonstrated for these characters, but there is no evidence at this time to indicate that separate names should be applied to populations exhibiting these differences. *M. fractifrons* is very closely related to the eastern *M. interruptus* (Beauvois) and to *M. mormon* (Casey). These species will be treated in detail in a monograph being prepared on the genus *Margarinotus*.

Margarinotus pluto (Casey) (= *H. interruptus*, abb. *albertensis* Hatch, *carri* Hatch; *Hister interruptus*, McGrath and Hatch, not Beauvois), new synonymy.

Hister pluto Casey, 1893, Ann. N. Y. Acad. Sci., **7**: 542—Oregon (No. 38410, United States National Museum).

Margarinotus pluto, Wenzel, 1944, Field Mus. Nat. Hist., Zool. Ser., **28**: 126.

Hister interruptus, ab. *albertensis* Hatch, 1926, Can. Ent., **58**: 275—Alberta, Medicine Hat (No. 2428, Canadian National Collection); Wenzel, 1939, Ohio Jour. Sci., **39**: 12.

Hister interruptus, ab. *carri* Hatch, loc. cit., p. 276—Alberta, Medicine Hat (No. 2429, Canadian National Collection); Wenzel, loc. cit.

Hister interruptus, McGrath and Hatch, 1941, Univ. Washington Pub. Biol., **10**: 70, not Beauvois, 1805.

In 1938, following Prof. Hatch, I mistakenly regarded *albertensis* and *carri* as variants of *interruptus*. Examination of the types shows them to be specimens of *pluto*, as are the specimens upon which McGrath and Hatch (1941) based their Washington records of *Hister interruptus*. The last named species does not occur in the Pacific Northwest, but is replaced there by the very closely related *M. fractifrons* (Casey).

Margarinotus umbrosus (Casey) (=*Hister umbratilis* Casey; *H. umbilicatus*, McGrath and Hatch, 1941, not Casey), new synonymy.

Hister foedatus, Horn, 1873, Proc. Amer. Phil. Soc., **13**: 286, in part.

Hister umbrosus Casey, 1893, Ann. N. Y. Acad. Sci., **7**: 545 (key), 547—Oregon (No. 38423, United States National Museum); 1916, Mem. Coleop., **7**: 218.

Margarinotus umbrosus Casey, 1916, Mem. Coleop., **7**: 217—California (No. 38420, United States National Museum).

Hister umbratilis Casey, 1916, Mem. Coleop., **7**: 217—California (No. 38420, United States National Museum).

Margarinotus umbratilis, Wenzel, loc. cit.

Hister umbilicatus, McGrath and Hatch, 1941, Univ. Washington Pub. Biol., **10**: 70, pl. 17, fig. 44, not Casey, 1893.

Although *Margarinotus umbilicatus* (Casey) may occur in southern Oregon, I have not yet seen specimens from the Pacific Northwest. The species recorded from Washington by McGrath and Hatch is, as indicated above, *M. umbrosus*.

Margarinotus fenderi, new species. Figure 79, B–E.

Hister pluto McGrath and Hatch, 1941, Univ. Washington Pub. Biol., **10**: 69, pl. 17, fig. 42, not Casey, 1893.

A small subparallel species; two lateral pronotal striae complete; pronotal sides and anterior margin broadly and strongly punctate; four dorsal striae complete, the fifth abbreviated at basal half, the sutural abbreviated on basal fourth or third, none of the striae with basal appendices or fossettes; epipleura essentially smooth and almost completely flat; pygidia coarsely, umbilicately punctate; prosternal striae well developed; lateral metasternal stria terminating posteriorly without turning laterally, its lateral arm represented by a short oblique line in front of metacoxa. Protibiae 4–6 denticulate, the two apical teeth larger than the others.

M. fenderi is closely related only to an undescribed species collected from a nest of *Thomomys* in California. Both species show

relationships with *Margarinotus boleti* (Lewis), a fungus-dwelling species from Japan, Formosa, and northern India. Among the described North American species of *Margarinotus, M. fenderi* most closely resembles *remotus*, a larger species which possesses only a single lateral pronotal stria and an entirely different type of aedeagus. The pygidial punctures in *fenderi* resemble those of *umbilicatus* (Casey) but are distinctly sparser. *M. umbilicatus* is oblong-oval, has an abbreviated outer pronotal stria, has only rudimentary carinal prosternal striae, if any, and possesses dorsal spines at the apex of the aedeagus.

Description.—Form elongate, oblong, subparallel, moderately convex, distinctly and rather broadly impressed along elytral suture. Surface above with fine, needle-like, irregular scratches, these especially well defined and finer and denser on head and pronotum. Head sparsely but distinctly and finely punctulate, the punctures more distinct immediately behind the frontal stria, which is strong, complete, and feebly, inwardly arcuate at middle.

Pronotal sides feebly arcuate, subparallel on basal half, thence more strongly arcuate and converging to apical angles. Marginal stria broadly interrupted behind head; typically, extending basally to middle or a little beyond, sometimes represented by a short isolated line nearer base; complete in one paratype, in two others extending to basal fourth or third, in another abbreviated at middle and represented basally by a long stria which overlaps the apical portion. Both outer and inner lateral pronotal striae present and complete, the outer feebly outwardly arcuate and rather close to the margin, often a little abbreviated either apically or basally or both, finely crenated by punctures; inner pronotal stria feebly, inwardly arcuate, more strongly impressed than the outer (both subcariniform; that is, with only one edge, the outer, well defined); apically, either lateral stria may be confused with punctures, and either, or both, may be united with apical stria (with about equal frequency in type series). Disk very strongly and closely punctate anteriorly and along the sides within inner lateral stria and especially within anterior angles. Interval between lateral striae with a few finer, but strong, scattered punctures; disk elsewhere sparsely punctulate, rather inconspicuously so in a broad, deep, antescutellar area. Basal margin with a narrow band of strong, fine punctures. Antescutellar impression short, linear.

Dorsal elytral striae strongly impressed, feebly arcuate and distinctly but not strongly crenated, the first and third striae usually somewhat more coarsely impressed at base and with a coarse basal puncture or fovea; fifth dorsal usually extending to middle or slightly beyond, extending to basal third in one paratype, present on only apical two-fifths in another. Sutural stria usually extending to basal third or fourth, slightly beyond middle in holotype. Outer subhumeral stria complete (slightly abbreviated at base in type), only feebly arcuate basally. Epipleural fossette flat for the greater part of its length (concave for only a short distance at mid-length of elytra), with a single strong, complete, crenated marginal elytral stria, a row of strong fine punctures present along dorsal edge of stria; marginal epipleural stria sometimes feebly indicated at level of fossette concavity.

Propygidium and pygidium very coarsely and densely, umbilicately punctate, punctures fine along basal margin of propygidium. Pygidium abruptly more finely

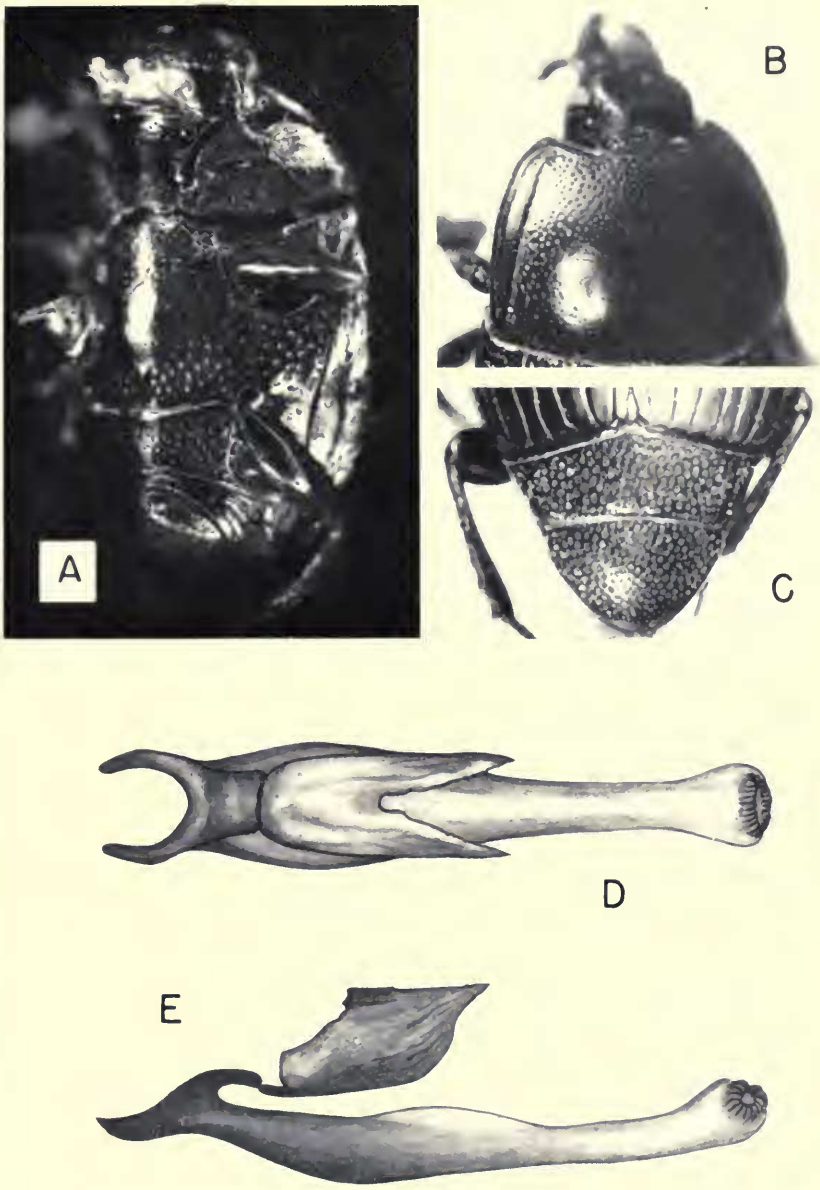

FIG. 79. A, *Bacanius hatchi*, n. sp. (holotype), under side (× 60). B–E, *Margarinotus fenderi*, n. sp., female paratype (Neotsu, Oregon): B, head and pronotum (× 20); C, pygidia (× 17); D, E, median lobe and armature of aedeagus, holotype (× 105), dorsal and lateral views, respectively.

and sparsely punctate just before apex, the apices sparsely punctulate. Pygidium relatively less coarsely and somewhat more sparsely punctate in the male than in the female (especially at middle), the punctation remarkably uniform across width of pygidium in the female.

Prosternal keel rather narrow, striate, the striae divergent apically and basally, usually abbreviated posteriorly at basal fifth or sixth, rarely extending nearly to basal margin. Lobe with a strong complete marginal stria, both lobe and keel punctulate, the punctures becoming denser and strong, but not coarse, laterally. Mesosternum distinctly emarginate, the marginal stria complete, meso-metasternal suture strongly impressed, smoothly striiform, continuous on each side with the lateral metasternal stria which is oblique, subcariniform, crenated, and extends to near hind coxa but terminates without recurving, narrowly separated apically from a short, transverse, feebly oblique stria that is present in front of outer half of hind coxa and represents lateral arm of lateral metasternal stria. Meso-metasternal disk sparsely punctulate, the punctulation stronger toward the lateral metasternal stria. Meso-postcoxal stria extremely variable, sometimes either absent or complete, or extending only about halfway to metasternal-mesepimeral suture. Oblique lateral stria of first abdominal sternum complete. Intercoxal disk punctulate, more distinctly so laterally along stria, especially apically where the punctures become more numerous, coarser, and umbilicate; apical margin of first sternum with a row of rather fine umbilicate punctures. Pleurites and elevated sides of metasternum and first sternum coarsely umbilicately punctate. Metepimeron without strioles.

Outer margin of protibiae widest at apex, with from 4–5 denticles, the fourth sometimes small, the fifth and sixth minute, the first and second of about equal size and stronger than the others. Apical margin truncated, with 3 denticles, the outer largest and very close to the apical tooth of the outer margin. Outer margins of middle and posterior tibiae feebly sinuate before apex, biseriately spinulose and with a marginal row of setae. Apical margin fringed with spinules, none of these strong.

Length, P–E, ♂ 3.15–4.05 mm., ♀ 4.12–4.64 mm.; P–P, ♂ 3.90–4.56 mm., ♀ 4.65–5.47 mm. Width, ♂ 2.38–2.71 mm., ♀ 2.64–3.12 mm.

Holotype.—A male from Everett (Snohomish County), Washington, collected July 12, by H. F. Wickham. In the collection of Chicago Natural History Museum (from the F. J. Psota collection).

Paratypes.—WASHINGTON: Seattle, a male, June 1, 1911; a female, May 2, 1912 (specimen figured by McGrath and Hatch); a female, August 1, 1935, "D. B." Swamp Creek, King County, a female, May 24, 1934, J. L. Wilson. King County, a female, April 12, 1930, "6.F.E." OREGON: Neotsu (Lincoln County), a male and two females, April 23, 1939. Manzanita (Tillamook County), a male, April 21, 1940.

Paratypes deposited in the Hatch Collection of the University of Washington, Chicago Natural History Museum, California Academy of Sciences, United States National Museum, Canadian National Collection at Ottawa, and the British Museum (Natural History).

Remarks.—There are no ecological data with any of the specimens; hence there is no clue as to the habits of *M. fenderi.* As pointed out above, the only species to which it is closely related is from a nest of a pocket gopher, *Thomomys monticola.* It is possible that *fenderi,* too, may be a nest inhabitant.

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